Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 25 of the	)	
Commission's Rules to Facilitate the Use of	)	
Earth Stations in Motion Communicating with	)	IB Docket No. 17-95
Geostationary Orbit Space Stations in	)	
Frequency Bands Allocated to the Fixed	)	
Satellite Service	)	

COMMENTS OF HUGHES NETWORK SYSTEMS, LLC

Hughes Network Systems, LLC ("Hughes") hereby submits these comments in the above-captioned proceeding in response to comments filed regarding the Federal Communications Commission's ("Commission") Further Notice of Proposed Rulemaking ("NPRM") to expand the scope of the Commission's rules to permit Earth Stations in Motion ("ESIMs") to communicate with geostationary orbit ("GSO") satellites operating in the fixed-satellite service ("FSS") to additional frequency bands.[1]

Hughes is the nation's largest provider of satellite broadband services, with approximately 1.3 million subscribers in the Americas.[2] Hughes offers Commission-defined broadband speeds of over 25 Mbps down and 3 Mbps up for residential customers, and 55 Mbps down and 5 Mbps up for enterprise users, across the continental United States, southern Alaska and Puerto Rico. In 2018, Hughes obtained Commission authority to launch and operate its

[1] *Amendment of Parts 2 and 25 of the Commission's Rules to Facilitate the Use of Earth Stations in Motion Communicating with Geostationary Orbit Space Stations in Frequency Bands Allocated to the Fixed Satellite Service*, Report and Order and Further Notice of Proposed Rulemaking, 33 FCC Rcd 9327 (2018) ("*Report and Order*" or "*ESIM FNPRM*").

[2] Press Release, EchoStar, EchoStar Announces Financial Results for Three and Nine Months Ended September 30, 2018 (Nov. 8, 2018), https://www.hughes.com/who-we-are/resources/press-releases/echostar-announces-financial-results-three-and-nine-months-0.

next-generation satellite, JUPITER 3, to provide state-of-the-art satellite broadband services to consumers across the United States.[3] As the first-of-its-kind ultra-high density satellite, JUPITER 3 is designed to provide two-way internet access throughout the United States at speeds up to an estimated 100 Mbps down and 10 Mbps up.

An important part of the Hughes broadband business is ensuring that its broadband service reaches mobile consumers. Hughes has deployed Ka-band ESIMs operating with its GSO satellites for more than a decade,[4] and its technology is currently powering broadband services to aircraft around the world.[5] ESIM services, such as those that Hughes provides, are increasingly important to consumers across the United States, as the demand for anytime, anywhere broadband connectivity continues to proliferate.[6]

Hughes supports the Commission's proposals to expand its ESIM rules to permit operations with GSO FSS systems in additional frequency bands in which earth stations at fixed

[3] *See* Hughes Network Systems, LLC Application for Satellite Space Station Authorizations, IBFS File No. SAT-LOA-20170621-00092 (Mar. 20, 2018) (granted in part, deferred in part). The satellite is under construction and planned for launch in 2021.

[4] HNS License Sub, LLC, IBFS File No. SES-RWL-20170905-00976, Call Sign E020205 (granted Sept. 5, 2017).

[5] *See, e.g.*, Press Release, *Hughes, Hughes Demonstrates High Definition Video Over Satellite from Rotary Wing Aircraft* (July 19, 2015), https://government.hughes.com/who-we-are/resources/press-releases/hughes-demonstrates-high-definition-video-over-satellite-rotary; Press Release, Hughes, *Global Eagle Entertainment and Hughes Expand 10-Year Relationship to Bring High-Throughput Ka-band Connectivity Services to North American Airlines* (Mar. 21, 2016), https://www.hughes.com/who-we-are/resources/press-releases/global-eagle-entertainment-and-hughes-expand-10-year; Press Release, Thales, *Thales and SES Select Hughes for Next-Generation Aviation Connectivity Network to Provide Increased Capacity, Coverage and Redundancy Over the Americas* (Mar. 8, 2017), https://www.hughes.com/collateral-library/thales-and-ses-select-hughes-next-generation-aviation-connectivity-network.

[6] Hughes has forged a partnership with OneWeb, which plans to deploy provide high-speed, low latency service to even the most remote and rural locations with its NGSO constellation. Press Release, Hughes, *Hughes Ships First Gateways for the Ground Network to Support OneWeb's Low Earth Orbit Constellation* (Mar. 13, 2018), https://www.hughes.com/who-we-are/resources/press-releases/hughes-ships-first-gateways-ground-network-support-onewebs-low.

locations operating in GSO FSS satellite networks can be blanket-licensed.[7] Specifically, the Commission proposes to extend the ESIM rules adopted in the *Report and Order* to ESIMs communicating with GSO FSS systems in the Ku- and Ka-bands: 10.7-10.95 GHz and 11.2-11.45 GHz on an unprotected basis;[8] 17.8-18.3 GHz (space-to-Earth) on a secondary basis; 19.3-19.4 GHz and 19.6-19.7 (space-to-Earth) on a primary basis; and 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) on a secondary or unprotected, non-interference basis.

Hughes supports the extension of the ESIMs rules adopted in September 2018 to the above frequency bands, provided that the rules and protections adopted in the *Report and Order* are extended to ensure that ESIM transmissions do not interfere with other satellite operations (*e.g.,* non-target GSO systems). In particular, the Commission should require ESIM operations in the frequency bands covered in the *FNPRM* to comply with applicable off-axis e.i.r.p. density limits specified in Section 25.218 for the Ku-band, Ka-band, and Appendix 30B earth station operation.[9] In addition, the Commission should subject ESIM operations in the proposed frequency bands to the shutdown requirements in new Section 25.228.[10] With these protections in place, the Commission can ensure that ESIMs communicating with GSO space stations "should not introduce a material change to the interference environment"[11] and protect other

[7] *ESIM FNPRM* ¶ 91.

[8] During the initial GSO ESIM rulemaking phase, Hughes asked the Commission to reject SES and O3b's proposal to allow ESIM operators to designate operations with satellites in the 10.7-10.95 GHz and 11.2-11.45 GHz bands. Hughes does not object here as the Commission is seeking consideration of these bands in a separate rulemaking. See FCC Actions to Facilitate New Satellite Broadband Deployment at 3 (Mar. 2018), attached to letter from Jodi Goldberg, Associate Corporate Counsel, EchoStar Corporation to Marlene H. Dortch, Secretary, FCC, IB Docket No. 17-95 (filed Mar. 8, 2018).

[9] 47 C.F.R. § 25.218.

[10] *Id.* § 25.228(b)-(c) (requiring ESIMs exceeding authorized off-axis e.i.r.p. density limits to cease transmissions).

[11] *ESIM FNPRM* ¶ 91.

spectrum users including non-target GSO operators from undesired or misdirected ESIM transmissions.

Respectfully submitted,

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